



SEQUENCE LISTING

<110> E. I. du Pont de Nemours and Company

<120> Homologs of MAR-binding Filament-like protein 1 (MFP1)

<130> BC1003 PCT

<140>

<141>

<150> 60/128,900

<151> 1999-04-12

<160> 26

<170> Microsoft Office 97

<210> 1

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<212> DNA

<213> Nicotiana tabacum

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<211> 721

<212> PRT

<213> Nicotiana tabacum

<400> 2

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35 40 45
Ile His Ser Glu Asn Gln Lys Glu Ser Glu Phe Cys Ser Arg Arg Thr
50 55 60
Ile Leu Phe Val Gly Phe Ser Val Leu Pro Leu Leu Ser Leu Arg Ala
65 70 75 80
Asn Ala Phe Glu Gly Leu Ser Val Asp Ser Gln Val Lys Ala Gln Pro
85 90 95
Gln Lys Glu Glu Thr Glu Gln Thr Ile Gln Gly Asn Ala Glu Asn Pro
100 105 110
Phe Phe Ser Leu Leu Asn Gly Leu Gly Val Phe Gly Ser Gly Val Leu
115 120 125
Gly Ser Leu Tyr Ala Leu Ala Arg Asn Glu Lys Ala Val Ser Asp Ala
130 135 140
Thr Ile Glu Ser Met Lys Asn Lys Leu Lys Glu Lys Glu Ala Thr Phe
145 150 155 160
Val Ser Met Glu Lys Lys Phe Gln Ser Glu Leu Leu Asn Glu Arg Asp
165 170 175
Ile Arg Asn Asn Gln Leu Lys Arg Ala Gly Glu Glu Arg Gln Ala Leu
180 185 190
Val Asn Gln Leu Asn Ser Ala Lys Ser Thr Val Thr Asn Leu Gly Gln
195 200 205
Glu Leu Gln Lys Glu Lys Arg Ile Ala Glu Glu Leu Ile Val Gln Ile
210 215 220
Glu Gly Leu Gln Asn Asn Leu Met Gln Met Lys Glu Asp Lys Lys Lys
225 230 235 240
Leu Gln Glu Glu Leu Lys Glu Lys Leu Asp Leu Ile Gln Val Leu Gln
245 250 255
Glu Lys Ile Thr Leu Leu Thr Thr Glu Ile Lys Asp Lys Glu Ala Ser
260 265 270
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275 280 285
Lys Leu Ser Ser Met Tyr Gln Glu Ser Gln Asp Gln Leu Met Asn Leu
290 295 300
Thr Ser Glu Ile Lys Glu Leu Lys Val Glu Val Gln Lys Arg Glu Arg
305 310 315 320

Glu Leu Glu Leu Lys Arg Glu Ser Glu Asp Asn Leu Asn Val Arg Leu
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 340 345 350
 Ile Gln Lys Glu Tyr Ser Glu Phe Lys Ser Ile Ser Glu Lys Lys Val
 355 360 365
 Ala Ser Asp Ala Lys Leu Leu Gly Glu Gln Glu Lys Arg Leu His Gln
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 385 390 395 400
 Val Leu Ile Ala Asp Leu Thr Gln Glu Lys Glu Asn Leu Arg Arg Met
 405 410 415
 Leu Asp Ala Glu Leu Glu Asn Ile Ser Lys Leu Lys Leu Glu Val Gln
 420 425 430
 Val Thr Gln Glu Thr Leu Glu Lys Ser Arg Ser Asp Ala Ser Asp Ile
 435 440 445
 Ala Gln Gln Leu Gln Gln Ser Arg His Leu Cys Ser Lys Leu Glu Ala
 450 455 460
 Glu Val Ser Lys Leu Gln Met Glu Leu Glu Glu Thr Arg Thr Ser Leu
 465 470 475 480
 Arg Arg Asn Ile Asp Glu Thr Lys Arg Gly Ala Glu Leu Leu Ala Ala
 485 490 495
 Glu Leu Thr Thr Thr Arg Glu Leu Leu Lys Lys Thr Asn Glu Glu Met
 500 505 510
 His Thr Met Ser His Glu Leu Ala Ala Val Thr Glu Asn Cys Asp Asn
 515 520 525
 Leu Gln Thr Glu Leu Val Asp Val Tyr Lys Lys Ala Glu Arg Ala Ala
 530 535 540
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 545 550 555 560
 Leu Thr Phe Leu Glu Ala Gln Ile Thr Arg Glu Lys Glu Ser Arg Lys
 565 570 575
 Asn Leu Glu Glu Glu Leu Glu Arg Ala Thr Glu Ser Leu Asp Glu Met
 580 585 590
 Asn Arg Asn Ala Phe Ala Leu Ala Lys Glu Leu Glu Leu Ala Asn Ser
 595 600 605
 His Ile Ser Ser Leu Glu Asp Glu Arg Glu Val Leu Gln Lys Ser Val
 610 615 620
 Ser Glu Gln Lys Gln Ile Ser Gln Glu Ser Arg Glu Asn Leu Glu Asp
 625 630 635 640
 Ala His Ser Leu Val Met Lys Leu Gly Lys Glu Arg Glu Ser Leu Glu
 645 650 655

Lys Arg Ala Lys Lys Leu Glu Asp Glu Met Ala Ser Ala Lys Gly Glu
 660 665 670
 Leu Arg Leu Arg Thr Gln Val Asn Ser Val Lys Ala Pro Val Asn Asn
 675 680 685
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 Ser

<210> 3
 <211> 1199
 <212> DNA
 <213> Nicotiana tabacum

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 cagagaagag agtggcttca gatgccaagc tggtggggga acaagaaaag agactacacc 180
 agctcgagga acaacttggg actgccgtaa gtgaagtaag aaaaaataaa gtgctaattg 240
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 aaaatcgtga taacttacag acggagctag ttgatgtcta caagaaagca gaacgtgctg 660
 ttaatgaact gaaacaagaa aagaatattg tcgtgacatt ggagaaagag ctaacatttt 720
 tggaggctca aattacaaga gagaaagagt cacggaagaa tctggaagaa gaggttggaaa 780
 gggctacaga atcacttgat gagatgaaca gaaatgcttt tgcacttgca aaggagctgg 840
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 tggatgatgaa acttggcaag gaacgcgaga gtctggagaa gagagcaaag aaattggaag 1020
 atgaaatggc atcagcaaaa ggtgagattt tgcggttgcg gacacaagta aattcggtaa 1080
 aagctcctgt taacaaagag gaaaaagttg aagctgggga aaaggcaaca gtaacagtga 1140
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<210> 4
 <211> 398
 <212> PRT
 <213> Nicotiana tabacum

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 Tyr Ser Glu Phe Lys Ser Ile Ser Glu Lys Arg Val Ala Ser Asp Ala
 35 40 45
 Lys Leu Leu Gly Glu Gln Glu Lys Arg Leu His Gln Leu Glu Glu Gln
 50 55 60
 Leu Gly Thr Ala Val Ser Glu Val Arg Lys Asn Lys Val Leu Ile Ala
 65 70 75 80

Asn Leu Thr Gln Ala Lys Glu Asn Leu Arg Arg Met Leu Asp Ala Glu
 85 90 95
 Leu Glu Asn Val Ser Lys Leu Lys Leu Glu Val Gln Val Thr Gln Glu
 100 105 110
 Thr Leu Glu Lys Ser Arg Ser Glu Ala Ser Asp Ile Val Glu Gln Leu
 115 120 125
 Gln Gln Ser Arg His Leu Cys Ser Lys Leu Glu Ala Glu Val Ser Lys
 130 135 140
 Leu Gln Met Glu Leu Glu Glu Thr Arg Thr Leu Leu Gln Lys Asn Ile
 145 150 155 160
 Asp Glu Thr Lys Arg Gly Ala Glu Leu Leu Ala Ala Glu Leu Thr Thr
 165 170 175
 Thr Arg Glu Leu Leu Lys Lys Thr Asn Glu Glu Met His Thr Ile Ser
 180 185 190
 Asn Glu Leu Ala Ala Val Thr Glu Asn Arg Asp Asn Leu Gln Thr Glu
 195 200 205
 Leu Val Asp Val Tyr Lys Lys Ala Glu Arg Ala Val Asn Glu Leu Lys
 210 215 220
 Gln Glu Lys Asn Ile Val Val Thr Leu Glu Lys Glu Leu Thr Phe Leu
 225 230 235 240
 Glu Ala Gln Ile Thr Arg Glu Lys Glu Ser Pro Lys Asn Leu Glu Glu
 245 250 255
 Glu Leu Glu Arg Ala Thr Glu Ser Leu Asp Glu Met Asn Arg Asn Ala
 260 265 270
 Phe Ala Leu Ala Lys Glu Leu Glu Leu Ala Asn Ser Arg Ile Ser Ser
 275 280 285
 Leu Lys Asp Glu Arg Glu Val Leu Gln Lys Ser Val Ser Glu Gln Lys
 290 295 300
 Gln Ile Ser Gln Glu Ala Arg Glu Asn Leu Glu Asp Ala His Ser Leu
 305 310 315 320
 Val Met Lys Leu Gly Lys Glu Arg Glu Ser Leu Glu Lys Arg Ala Lys
 325 330 335
 Lys Leu Glu Asp Glu Met Ala Ser Ala Lys Gly Glu Ile Leu Arg Leu
 340 345 350
 Arg Thr Gln Val Asn Ser Val Lys Ala Pro Val Asn Lys Glu Glu Lys
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 370 375 380
 Arg Arg Lys Thr Ala Thr Pro Ala Ser Gln Gln Glu Gly Ser
 385 390 395

<210> 5
 <211> 588
 <212> DNA
 <213> Lycopersicon esculentum

<400> 5
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<210> 6
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<212> PRT
<213> Lycopersicon esculentum

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Asn Thr Ser Lys Leu Ala Glu Lys Glu Ser Glu Val Asn Ser Leu Ser
35 40 45
Asp Met Tyr Gln Gln Ser Gln Asp Gln Leu Met Asn Leu Thr Ser Glu
50 55 60
Ile Lys Glu Leu Lys Asp Glu Ile Gln Lys Arg Glu Arg Glu Leu Glu
65 70 75 80
Leu Lys Cys Val Ser Glu Asp Asn Leu Asn Val Gln Leu Asn Ser Leu
85 90 95
Leu Leu Glu Arg Asp Glu Ser Lys Lys Glu Leu His Ala Ile Gln Lys
100 105 110
Glu Tyr Ser Glu Phe Lys Ser Asn Ser Asp Glu Lys Val Ala Ser Asp
115 120 125
Ala Lys Leu Leu Gly Glu Gln Glu Lys Arg Leu His Gln Leu Glu Glu
130 135 140
Gln Leu Gly Thr Ala Leu Ser Glu Ala Ser Lys Asn Glu Val Leu Ile
145 150 155 160
Ala Asp Leu Thr Arg Glu Lys Glu Asn Leu Arg Arg Met Val Asp Ala
165 170 175
Glu Leu Asp Asn Val Asn Lys Leu Lys Gln Glu Ile Glu Val Thr Gln
180 185 190
Glu Ser Leu
195

<210> 7
<211> 662
<212> DNA
<213> Lycopersicon esculentum

<400> 7
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atgaactgaa acaagaaaag agcattgttg caacactaga agaagagtta aaatttctgg 180
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ctccagtgga ggatgaggaa aaagttgttg ctggggaaaa ggaaaaggtg aaggcaacag 600
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<210> 8
<211> 226
<212> PRT
<213> Lycopersicon esculentum

<400> 8
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20 25 30
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35 40 45
Leu Lys Gln Glu Lys Ser Ile Val Ala Thr Leu Glu Glu Glu Leu Lys
50 55 60
Phe Leu Glu Ser Gln Ile Thr Arg Glu Lys Glu Leu Arg Lys Ser Leu
65 70 75 80
Glu Asp Glu Leu Glu Lys Ala Thr Glu Ser Leu Asp Glu Ile Asn Arg
85 90 95
Asn Val Leu Ala Leu Ala Glu Glu Leu Glu Leu Ala Thr Ser Arg Asn
100 105 110
Ser Ser Leu Glu Asp Glu Arg Glu Val Leu Arg Gln Ser Val Ser Glu
115 120 125
Gln Lys Gln Ile Ser Gln Glu Ala Gln Glu Asn Leu Glu Asp Ala His
130 135 140
Ser Leu Val Met Lys Leu Gly Lys Glu Arg Glu Ser Leu Glu Lys Arg
145 150 155 160
Ala Lys Lys Leu Glu Asp Glu Met Ala Ala Ala Lys Gly Glu Ile Leu
165 170 175
Arg Leu Arg Ser Gln Ile Asn Ser Val Lys Ala Pro Val Glu Asp Glu
180 185 190
Glu Lys Val Val Ala Gly Glu Lys Glu Lys Val Lys Ala Thr Val Thr
195 200 205
Ala Lys Lys Thr Thr Arg Arg Arg Lys Ser Ala Thr Val Lys Gln Glu
210 215 220
Glu Pro
225

<210> 9
 <211> 1694
 <212> DNA
 <213> *Lycopersicon esculentum*

<400> 9
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 aaagaatcgg aggtaaatag tttgagcgat atgtatcaac aatcccagga tcagctgatg 180
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 gagcttctaa agaaaacaaa tgaagaaatg cacactatgt cagatgaact agtagctgtt 840
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 gaagatgaaa tggcagcagc aaaaggtgag attttgcggc tacggagcca aataaactca 1320
 gtaaaagctc cagtggagga tgaggaaaaa gttgttgctg gggaaaagga aaaggtgaag 1380
 gcaacagtaa cagcaaaaga aactaccagg agaagggaaga gtgctactgt taagcaagag 1440
 gaaccctagt tggctgtttc tgaatgacat aatcttcttc tttttttgtc ctgactcatt 1500
 tgtttgcaat atttatagag aggccagaat taggacattg ccattggaac aagctgtgta 1560
 ttgtctcttt gagtgtacat ttcccggcga gaaattgcag aaacaaatga ctgatctctt 1620
 gatattcagt caatgttgca gcttactgaa tgaaattatt tgtattgtaa aaaaaaaaaa 1680
 aaaaaaaaaa aaaa 1694

<210> 10
 <211> 1009
 <212> DNA
 <213> *Lycopersicon esculentum*

<400> 10
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 cggttatggc gagtatgcac tcggaaaatc aaaaggaaag taatgtctgc aacagaagat 180
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 aagggaagtgc agggaatccc ttctgttctc tacttaattg acttgggtgtt gttgggttcag 360
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 aagagaagct tgatttgatt caagttcttg aagaaaagat tactttgctt actacagaga 780
 tcaaagataa agaggtgagt cttcggagta acacctctaa actagctgaa aaagaatcgg 840
 aggtaaatag tttgagcgat atgtatcaac aatcccagga tcagctgatg aatttgactt 900
 cagagatcaa agaacttaaa gatgaaatcc agaaaagaga gagagaactg gaggttgaaat 960
 gtgtatcaga agacaacctg aatgtgcaat taaattcttt gctcctcga 1009

<210> 11
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<212> DNA
<213> Nicotiana tabacum

<400> 11
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ctgaccacta ctaggagct tctaaagaaa acaaatgaag aaatgcacac catatccaat 240
gaactagctg ctgttactga aaatcgtgat aacttacaga cggagctagt tgatgtctac 300
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gagaaagagc taacattttt ggaggctcaa attacaagag agaaagagtc acggaagaat 420
ctggaagaag agttggaag ggctacagaa tcacttgatg agatgaacag aaatgctttt 480
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gaagtgcctc aaaagtctgt ttctgagcag aagcaaatctt ctcaagaagc ccgagaaaac 600
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agagcaaaaga aattggaaga tgaaatggca tcagcaaaag gtgagatttt gcggttgcg 720
acacaagtaa attcggtaaa agctcctggt aacaaagagg aaaaagttga agctggggaa 780
aaggcaacag taacagtga gagaaacaacc aggaggagga agactgctac tcttgcctt 840
caacaagaag gctcataatt tgcgttttct gaagtgcac atatccttcc ttttttccct 900
gactcatatt aattgcaacg agggtagatt attggttcat tatataaaac cagaatgagg 960
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<211> 912
<212> DNA
<213> Nicotiana tabacum

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attgtgataa cttacagacg gagctagtgt atgtctacaa gaaagcagaa cgtgctgctg 180
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aggctcaaat tacaagagag aaagagtcac ggaagaatct ggaagaagag ctggaaaggg 300
ctacggaatc acttgatgag atgaaccgaa atgccttttc acttgcaaaag gagcttgagc 360
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ctgagcagaa acaaatttct caagaatccc gagaaaacct tgaagatgcc catagcctgg 480
taatgaaact tggcaaggaa cgcgagagtc tggagaagag agcaaaagaa ttggaagatg 540
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ctcctgttaa caatgaggaa aaagttgaag ctggggaaaa ggcagctgta acagtgaaga 660
gaaccaggag acttgatgag gctactcagc ctgcttctca gcaagaaagc tcatagtgtg 720
ctgttctaaa gtgacatata tttccttttt gtccctgact caaattgatt gcgacgagaa 780
tagattaatg gtgtattata gagaagccag aattaggata ttgcccttgt aagaaacttc 840
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aaaaaaaaaa aa 912

<210> 13
<211> 905
<212> DNA
<213> Nicotiana tabacum

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cagagaagag agtggttca gatgccaagc tgttggggga acaagaaaag agactacacc 180
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aaaatcgtga taacttacag acggagctag ttgatgtcta caagaaagca gaacgtgctg 660

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gggctagctc	gcttaagtac	aggagatgga	gaatccaccg	aagaatgaag	tagtggcaga	840
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ctccg						905

<210> 14
 <211> 1597
 <212> DNA
 <213> *Nicotiana tabacum*

<400> 14

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gaattctgca	gcagaagaac	gattcttttc	gtgggtttct	ctgttcttcc	acttctcagc	300
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tcattacgga	ggaacattga	tgagacaaaa	cgtgggtgcag	agctcttagc	tgcgagagctg	1560
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<210> 15
 <211> 564
 <212> DNA
 <213> *Nicotiana tabacum*

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gtttctaaac	ttcagatgga	attggaggaa	acaagaacat	cattacggag	gaacattgat	300
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aagaaaacaa	atgaagaaat	gcacactatg	tctcatgaac	tagcggctgt	tactgaaaat	420
tgtgataact	tacagacgga	gctagttgat	gtctacaaga	aagcagaacg	tgctgctgat	480
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gctcaaatta	caagagagaa	agag				564

<210> 16
 <211> 2154
 <212> DNA
 <213> *Lycopersicon esculentum*

<400> 16

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<210> 17
 <211> 717
 <212> PRT
 <213> *Lycopersicon esculentum*

<400> 17

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Cys	Ser	Ser	Gln	Phe	Thr	Pro	Leu	Leu	Ser	Cys	Pro	Arg	Asn	Thr	Gln
			20					25					30		
Ile	Cys	Arg	Lys	Lys	Arg	Pro	Val	Met	Ala	Ser	Met	His	Ser	Glu	Asn
		35					40					45			
Gln	Lys	Glu	Ser	Asn	Val	Cys	Asn	Arg	Arg	Ser	Ile	Leu	Phe	Val	Gly
	50					55					60				
Phe	Ser	Val	Leu	Pro	Leu	Leu	Asn	Leu	Arg	Ala	Arg	Ala	Leu	Glu	Gly
65					70				75					80	
Leu	Ser	Thr	Asp	Ser	Gln	Ala	Gln	Pro	Gln	Lys	Glu	Glu	Thr	Glu	Gln
				85				90					95		
Thr	Ile	Gln	Gly	Ser	Ala	Gly	Asn	Pro	Phe	Val	Ser	Leu	Leu	Asn	Gly
			100					105					110		

Leu Gly Val Val Gly Ser Gly Val Leu Gly Ser Leu Tyr Ala Leu Ala
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 Arg Asn Glu Lys Ala Val Ser Asp Ala Thr Ile Glu Ser Met Lys Asn
 130 135 140
 Lys Leu Lys Asp Lys Glu Asp Ala Phe Val Ser Met Lys Lys Gln Phe
 145 150 155 160
 Glu Ser Glu Leu Leu Ser Glu Arg Glu Asp Arg Asn Lys Leu Ile Arg
 165 170 175
 Arg Glu Gly Glu Glu Arg Gln Ala Leu Val Asn Gln Leu Lys Ser Ala
 180 185 190
 Lys Thr Thr Val Ile Ser Leu Gly Gln Glu Leu Gln Asn Glu Lys Lys
 195 200 205
 Leu Ala Glu Asp Leu Lys Phe Glu Ile Lys Gly Leu Gln Asn Asp Leu
 210 215 220
 Met Asn Thr Lys Glu Asp Lys Lys Lys Leu Gln Glu Glu Leu Lys Glu
 225 230 235 240
 Lys Leu Asp Leu Ile Gln Val Leu Glu Glu Lys Ile Thr Leu Leu Thr
 245 250 255
 Thr Glu Ile Lys Asp Lys Glu Val Ser Leu Arg Ser Asn Thr Ser Lys
 260 265 270
 Leu Ala Glu Lys Glu Ser Glu Val Asn Ser Leu Ser Asp Met Tyr Gln
 275 280 285
 Gln Ser Gln Asp Gln Leu Met Asn Leu Thr Ser Glu Ile Lys Glu Leu
 290 295 300
 Lys Asp Glu Ile Gln Lys Arg Glu Arg Glu Leu Glu Leu Lys Cys Val
 305 310 315 320
 Ser Glu Asp Asn Leu Asn Val Gln Leu Asn Ser Leu Leu Leu Glu Arg
 325 330 335
 Asp Glu Ser Lys Lys Glu Leu His Ala Ile Gln Lys Glu Tyr Ser Glu
 340 345 350
 Phe Lys Ser Asn Ser Asp Glu Lys Val Ala Ser Asp Ala Lys Leu Leu
 355 360 365
 Gly Glu Gln Glu Lys Arg Leu His Gln Leu Glu Glu Gln Leu Gly Thr
 370 375 380
 Ala Leu Ser Glu Ala Ser Lys Asn Glu Val Leu Ile Ala Asp Leu Thr
 385 390 395 400
 Arg Glu Lys Glu Asn Leu Arg Arg Met Val Asp Ala Glu Leu Asp Asn
 405 410 415
 Val Asn Lys Leu Lys Gln Glu Ile Glu Val Thr Gln Glu Ser Leu Glu
 420 425 430
 Asn Ser Arg Ser Glu Val Ser Asp Ile Thr Val Gln Leu Glu Gln Leu
 435 440 445

Arg Asp Leu Cys Ser Lys Leu Glu Ala Glu Val Ser Lys Leu Gln Met
 450 455 460
 Glu Leu Glu Glu Thr Arg Ala Ser Leu Gln Arg Asn Ile Asp Glu Thr
 465 470 475 480
 Lys His Ser Ser Glu Leu Leu Ala Ala Glu Leu Thr Thr Thr Lys Glu
 485 490 495
 Leu Leu Lys Lys Thr Asn Glu Glu Met His Thr Met Ser Asp Glu Leu
 500 505 510
 Val Ala Val Ser Glu Asn Arg Asp Ser Leu Gln Thr Glu Leu Val Asp
 515 520 525
 Val Tyr Lys Lys Ala Glu His Thr Ala Asn Glu Leu Lys Gln Glu Lys
 530 535 540
 Ser Ile Val Ala Thr Leu Glu Glu Glu Leu Lys Phe Leu Glu Ser Gln
 545 550 555 560
 Ile Thr Arg Glu Lys Glu Leu Arg Lys Ser Leu Glu Asp Glu Leu Glu
 565 570 575
 Lys Ala Thr Glu Ser Leu Asp Glu Ile Asn Arg Asn Val Leu Ala Leu
 580 585 590
 Ala Glu Glu Leu Glu Leu Ala Thr Ser Arg Asn Ser Ser Leu Glu Asp
 595 600 605
 Glu Arg Glu Val Leu Arg Gln Ser Val Ser Glu Gln Lys Gln Ile Ser
 610 615 620
 Gln Glu Ala Gln Glu Asn Leu Glu Asp Ala His Ser Leu Val Met Lys
 625 630 635 640
 Leu Gly Lys Glu Arg Glu Ser Leu Glu Lys Arg Ala Lys Lys Leu Glu
 645 650 655
 Asp Glu Met Ala Ala Ala Lys Gly Glu Ile Leu Arg Leu Arg Ser Gln
 660 665 670
 Ile Asn Ser Val Lys Ala Pro Val Glu Asp Glu Glu Lys Val Val Ala
 675 680 685
 Gly Glu Lys Glu Lys Val Lys Ala Thr Val Thr Ala Lys Lys Thr Thr
 690 695 700
 Arg Arg Arg Lys Ser Ala Thr Val Lys Gln Glu Glu Pro
 705 710 715

<210> 18
 <211> 407
 <212> DNA
 <213> Nicotiana tabacum

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 aggtttctaa acttcagatg gaattggagg aaacaagaac atcattacgg aggaacattg 300
 atgagacaaa acgtggtgca gagctcttag ctgcggagct gaccactact agggagcttc 360
 taaagaaaaa aaaaaaagga attcctgcag cccgggggat ccactag 407

<210> 19
 <211> 1491
 <212> DNA
 <213> Glycine max

<400> 19
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 aacttgccct aggtgaagca agcaaaagcc agatcgatcat tgctgattta tcccaacaaa 180
 gagatgattt gaaggaggct ctagataatg aatctagcaa ggtgaatcat ttgaagcaag 240
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 accttctaac tttgtcaaac aaactgtgca aagagctcga gctcgaggct tctaagctct 360
 catctgagct cactgaggtt aatgaatcgc tacagagaaa ccttgatgat gcgaaacatg 420
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 <211> 388
 <212> PRT
 <213> Glycine max

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 35 40 45
 Ser Gln Ile Val Ile Ala Asp Leu Ser Gln Gln Arg Asp Asp Leu Lys
 50 55 60
 Glu Ala Leu Asp Asn Glu Ser Ser Lys Val Asn His Leu Lys Gln Glu
 65 70 75 80
 Leu Gln Val Thr Leu Glu Asn Leu Ala Lys Ser Arg Asn Glu Ser Ala
 85 90 95
 Glu Leu Glu Asn Leu Leu Thr Leu Ser Asn Lys Leu Cys Lys Glu Leu
 100 105 110
 Glu Leu Glu Val Ser Lys Leu Ser Glu Leu Thr Glu Val Asn Glu
 115 120 125

Ser Leu Gln Arg Asn Leu Asp Asp Ala Lys His Glu Ala Glu Met Leu
 130 135 140
 Ala Ser Glu Leu Thr Thr Ala Lys Glu His Leu Lys Glu Ala Gln Ala
 145 150 155 160
 Glu Leu Gln Gly Cys Gln Lys Asn Leu Thr Ala Ala Leu Glu Lys Asn
 165 170 175
 Asp Ser Leu Gln Lys Glu Leu Val Glu Val Tyr Lys Lys Ala Glu Ser
 180 185 190
 Thr Ala Glu Asp Leu Lys Glu Gln Lys Gln Leu Val Ala Ser Leu Asn
 195 200 205
 Lys Asp Leu Gln Ala Leu Glu Gln Gln Val Ser Lys Asp Lys Glu Ser
 210 215 220
 Arg Lys Ser Leu Glu Arg Asp Leu Glu Glu Ala Thr Ile Ser Leu Asp
 225 230 235 240
 Glu Met Asn Arg Asn Ala Val Ile Leu Ser Gly Glu Leu Gln Arg Ala
 245 250 255
 Asn Ser Leu Val Ser Ser Leu Glu Lys Glu Lys Asp Val Leu Ile Lys
 260 265 270
 Ser Leu Thr Asn Gln Arg Asn Ala Cys Lys Glu Ala Gln Asp Asn Ile
 275 280 285
 Glu Asp Ala His Asn Leu Ile Met Lys Leu Gly Lys Glu Arg Glu Asn
 290 295 300
 Leu Glu Lys Lys Gly Lys Lys Phe Glu Glu Glu Leu Ala Ser Ala Lys
 305 310 315 320
 Gly Glu Ile Leu Arg Leu Lys Ser Arg Ile Asn Ser Ser Lys Val Ala
 325 330 335
 Val Asn Asn Gly Pro Val Gln Lys Asp Gly Gly Glu Lys Lys Val Asn
 340 345 350
 Pro Ser Lys Val Ala Val Asn Asn Glu Gln Ala Gln Lys Asp Glu Gly
 355 360 365
 Glu Asn Lys Val Thr Val Ser Ala Arg Lys Thr Val Arg Arg Arg Lys
 370 375 380
 Ala Asn Pro Gln
 385

<210> 21
 <211> 2019
 <212> DNA
 <213> Zea mays

<400> 21
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 atgaagttcc aggagcagga agtttctctt tcaggtcagt tggcttcagc aacaaagact 420

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caacctgtga	atgattataa	tcagaagacc	agtggagttg	ttgctggaac	tccacagcct	1980
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 <211> 672
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 35 40 45
 Asn Pro Leu Leu Gly Phe Leu Gly Ile Val Gly Val Ala Ala Ser Gly
 50 55 60
 Val Leu Gly Gly Leu Tyr Gly Thr Ser Leu Gln Glu Glu Lys Ala Leu
 65 70 75 80
 Gln Ser Ile Val Ser Ser Met Glu Ser Lys Leu Ala Glu Asn Glu Ala
 85 90 95
 Ala Leu Ser Leu Met Arg Asp Asn Tyr Glu Lys Arg Leu Leu Glu Gln
 100 105 110
 Gln Ala Ala Gln Lys Lys Gln Ser Met Lys Phe Gln Glu Gln Glu Val
 115 120 125
 Ser Leu Ser Gly Gln Leu Ala Ser Ala Thr Lys Thr Leu Thr Ser Leu
 130 135 140
 Ser Glu Glu Phe Arg Lys Glu Lys Lys Leu Ala Glu Glu Leu Arg Asp
 145 150 155 160

Glu Ile Gln Arg Leu Glu Ser Ser Ile Thr Gln Ala Gly Ile Asp Asn
 165 170 175
 Asp Val Leu Glu Thr Lys Leu Glu Glu Lys Leu Gly Glu Ile Asn Phe
 180 185 190
 Leu Gln Glu Lys Val Ser Leu Leu Asn Gln Glu Ile Asp Asp Lys Glu
 195 200 205
 Lys His Ile Arg Glu Leu Ser Ala Ser Leu Ser Ser Lys Glu Val Asp
 210 215 220
 Tyr Gln Lys Leu Thr Ala Phe Thr Asn Gln Thr Lys Lys Ser Leu Glu
 225 230 235 240
 Leu Ala Asn Ser Arg Val Gln Gln Leu Glu Glu Glu Leu Ser Thr Thr
 245 250 255
 Lys Asn Ala Leu Val Ser Lys Ile Ser Ser Ile Asp Ser Leu Asn Ala
 260 265 270
 Lys Leu Glu Thr Leu Asn Ser Glu Lys Lys Lys Leu Thr Lys Lys Ile
 275 280 285
 Asn Glu Leu Ile Gln Glu Tyr Thr Asp Leu Lys Val Ala Ser Glu Thr
 290 295 300
 Arg Ala Ser His Asp Ser Lys Leu Leu Ser Glu Arg Asp Asp Leu Ile
 305 310 315 320
 Lys Gln Leu Glu Glu Lys Leu Ser Val Ala Leu Thr Asp Ser Ser Lys
 325 330 335
 Asp Gln Glu Thr Ile Val Glu Leu Asn Lys Glu Leu Asp Ala Thr Lys
 340 345 350
 Met Met Leu Lys Asn Glu Leu Lys Ser Met Glu Ala Leu Lys Asp Ser
 355 360 365
 Ile Arg Ser Ser Glu Glu Ala Leu Lys Thr Ser Arg Ser Glu Val Ser
 370 375 380
 Lys Leu Ser Lys Glu Leu Glu Glu Ala Asn Glu Leu Asn Glu Asp Leu
 385 390 395 400
 Val Ser Gln Ile Ser Lys Leu Arg Glu Glu Ser Asn Glu Met Gln Val
 405 410 415
 Asp Leu Thr Asn Lys Leu Gly Glu Ala Glu Ser Leu Ser Lys Ala Leu
 420 425 430
 Ser Glu Asp Leu Ala Ser Val Asn Glu Met Val Gln Lys Gly Gln Glu
 435 440 445
 Glu Leu Glu Ala Thr Ser Ile Glu Leu Ala Ser Ile Ala Glu Ala Arg
 450 455 460
 Asp Asn Leu Lys Lys Glu Leu Leu Asp Ala Tyr Lys Asn Leu Glu Ser
 465 470 475 480
 Thr Thr His Glu Leu Val Glu Glu Arg Lys Ile Val Thr Ala Leu Asn
 485 490 495

Lys Glu Leu Glu Ala Leu Ala Lys Gln Leu Gln Val Asp Ser Glu Ala
 500 505 510
 Arg Lys Ser Leu Glu Ser Asp Leu Glu Glu Ala Thr Lys Ser Leu Asp
 515 520 525
 Glu Met Asn Asn Ser Ala Leu Leu Leu Ser Lys Glu Leu Glu Ser Thr
 530 535 540
 His Ser Arg Ser Ala Thr Leu Glu Ser Glu Lys Glu Met Leu Arg Lys
 545 550 555 560
 Ala Leu Ala Glu Gln Thr Lys Ile Thr Thr Glu Ala Lys Glu Asn Thr
 565 570 575
 Glu Asp Ala Gln Asn Leu Ile Thr Arg Leu Glu Thr Glu Lys Glu Ser
 580 585 590
 Phe Glu Leu Arg Cys Arg His Leu Glu Glu Glu Leu Ala Leu Ala Lys
 595 600 605
 Gly Glu Ile Leu Arg Leu Arg Arg Gln Ile Ser Thr Asn Ser Ser Gln
 610 615 620
 Lys Pro Arg Ala Arg Gly Pro Pro Glu Ala Ser Glu Thr Leu Lys Glu
 625 630 635 640
 Gln Pro Val Asn Asp Tyr Asn Gln Lys Thr Ser Gly Val Val Ala Gly
 645 650 655
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 <212> DNA
 <213> Oryza sativa

<220>
 <223> n= g, a, c or t

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 tcttatctct aggttcaga ctgagaagga gagttttgaa atgagggcta gacatcttga 180
 agaggagttg gcgttagcaa agggtagat attgcgccta agaaggcaga ttagtacaag 240
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 tccangacga gcaggctgtg aa 322

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 <213> Oryza alta

<220>
 <223> X= G or R

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 Leu Ser Lys Ala Leu Ala Glu Gln Gln Lys Ile Thr Thr Glu Ala His
 20 25 30

